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ABSTRACT

The purpose of this study was to investigate changes during teacher training in students' anxiety, attitude, concerns, and confidence about becoming a teacher and the relationships between these changes and selected student characteristics. The subjects were comprised of three groups of students (N-581) at three stages of their teacher preparation: beginning their first required education course, just prior to student teaching, and at the end of student teaching. There were significant changes in anxiety, concern, attitude, and confidence about teaching; however, these changes did not follow a consistent pattern for each measure or for all sample subgroups. Changes in anxiety and confidence about teaching moved in a consistently positive direction; attitude towards teaching showed no overall change; and concerns about teaching increased prior to student teaching but decreased following student teaching. The student characteristics of anticipated grade level of teaching, gender, teaching field, time of decision to become a teacher, and father's educational level were found to be related to one or more of the criterion measures. Four pages of references and data tables are included. (Author)

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Relationships Between Student Characteristics and Changes in Attitudes, Concerns, Anxieties and Confidence About Teaching During Teacher Preparation

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Abstract

The purpose of this study was to investigate changes during teacher training in students' anxiety, attitude, concerns, and confidence about becoming a teacher and the relationships between these changes and selected student characteristics. The subjects were comprised of three groups of students (N=581) at three stages of their teacher preparation: beginning their first required education course, just prior to student teaching, and at the end of student teaching. There were significant changes in anxiety, concern, attitude, and confidence about teaching; however, these changes did not follow a consistent pattern for each measure or for all sample subgroups. Changes in anxiety and confidence about teaching moved in a consistently positive direction; attitude towards teaching showed no overall change; and concerns about teaching increased prior to student teaching but decreased following student teaching. The student characteristics of anticipated grade level of teaching, gender, teaching field, time of decision to become a teacher, and father's educational level were found to be related to one or more of the criterion measures.

Relationships Between Student Characteristics and Changes in Attitudes, Concerns, Anxieties and Confidence About Teaching During Teacher Preparation

Teacher personality and characteristics have long held the interest of educational researchers, and the question of who makes a good teacher is of fundamental importance to educators. Studies completed in the 1960's and 1970's typically attempted to describe various attributes of educators (Ryan & Phillips, 1982), but more recent researchers have tended to study teachers and teacher training from more theoretical frameworks (Veenman, 1984). For example, Fuller (Fuller & Brown, 1975) has conceptualized preservice teachers as passing through developmental stages of concerns about becoming a teacher. Concerns are viewed as perceived problems or worries about teaching and are measured by the Teacher Concerns Questionnaire which consists of three subscales, self, task, and impact (George, 1978). The form used in the present study consisted of fifteen items, five in each subscale. Each item is answered on a continuum from 1 (not concerned) to 5 (extremely concerned).

In the Fuller model of teacher training, the preteaching period is characterized by nonconcern as a teacher while identifying with and being concerned about survival as a student. The following stage is characterized by early concerns about survival as a teacher. In the next stage, concerns of initial

teacher-education students are directed toward the varied demands of the teaching situation and their own ability to perform as a teacher. And last, concerns of teacher education students about their pupils and their learning are felt deeply but not acted upon due to coping with the immediate situational demands of student teaching type experiences.

Parsons (1973) developed the Teaching Anxiety Scale with the implicit assumption that teaching anxiety will decrease as knowledge and skills develop during training. This is a situation specific test which has been validated against other indices of anxiety including observations of teachers. It is a 29 item scale where each item is answered on a continuum from 1 (never) to 5 (always) with the lowest possible score of 29 representing very little anxiety about teaching and the highest possible score of 145 representing extreme anxiety about teaching. Fuller (1969) and Coates and Thoresen (1976) appear to equate teacher concerns with the needs and anxieties of student teachers on the assumption that concerns elicit anxiety feelings. Others maintain that anxiety about teaching may consist of expressive situational concerns plus unspecified, unverbalized anxiety; but by nature of its validation the Teaching Anxiety Scale would appear to be compatible with either view (Kearney & Sinclair, 1978).

Merwin and DiVesta (1959) developed the situation specific Attitude Towards Teaching As A Career scale based upon need theory and the attitude-concept view of attitude structure. This is an eleven-item scale which is answered on a 1 (strongly agree) to a 6 (strongly disagree) continuum with a score of 11 representing the least positive and 66 the most positive attitude. Attitudes on this scale are conceptualized as a function of the individual belief value matrix, and attitudes evolve from perceptions that the attitude object block (negative) or facilitate (positive) need satisfaction. One then has a positive attitude towards teaching as a career if he perceives teaching as satisfying his underlying needs. From a developmental perspective, teachers in training should show an increasingly more positive attitude toward teaching as their knowledge and skills develop.

Not all theorists, however, believe that real change occurs during teacher training. Lortie (1975) argues that teacher training has little impact on the socialization of teachers; rather he states that teacher socialization occurs primarily from the thousands of hours spent as a pupil in the classroom. Further, considerable debate exists in the literature over the role that the student teaching experience plays in the development of teachers. For example, Berliner (1985) states that there is reason to distrust the increased faith in student

teaching and related field experiences to bring about reform in teacher preparation. Tabachnick and Zeichner (1984) reviewed much of the literature on both sides of this issue as well as examined the issue of whether student teaching offers continuity in the campus-based experiences (i.e., Does student teaching "wash out" the liberalizing effects of campus-based experiences?).

Coates and Thoresen (1976) reviewed much of the research literature on teacher anxiety and concluded that: a) both preservice and inservice teachers report considerable anxiety, stress, and concern about teaching; b) the effects of anxiety on teachers and their students remain unclear due to the limitations of existing research; c) the most commonly expressed anxieties of inservice teachers relate to time demands, difficulties with students, large class enrollments, financial constraints, and lack of education resources. Student teachers report anxieties about their master teacher, and about their college supervisor (Yee, 1969) and about video taped teaching sessions (Fuller & Manning, 1973).

Lortie (1975) describes the central concern of preservice teachers as being doubtful of actually being able to conduct instruction. Fuller and Brown (1975) summarized student teaching and beginning teacher concerns as evolving about having the ability to maintain discipline, being liked by students,

possessing adequate subject knowledge, handling mistakes or running out of material, and being able to function effectively with others in the school setting. Little research is yet available which validates Fuller's conception of stages of teacher concern although some studies provide partial support for this model (Adams, Hutchinson, & Martray, 1980; Adams & Martray, 1981; Sitter & Lamin, 1982). These studies suggest change in self-related concerns but little or no change in task and impact concerns through five-year training programs.

Research on prospective teacher attitudes towards teaching suggests that prospective teachers have positive attitudes toward children, have less concern than other college students about future income, view teaching as a good preparation for family life, and have a desire to help others (Richards, 1960). During teacher training itself attitudes tend to change from more formalized and rigid to more liberal and democratic but with a return to the former less humanistic classroom management attitude during student teaching (Callahan, 1980; Jacobs, 1968; Lipka & Garlet, 1981) although the overall positiveness of attitude toward teaching and children may become even more positive during student teaching (Paschal & Treloar, 1979; Sandgren & Schmidt, 1956). Additionally, Villeme and Hall's (1980) research indicates that prospective teacher attitude

toward education varies by gender, anticipated teaching grade level, and selected major within education.

Purpose

From the developmental perspective and from a review of related literature, one is led to expect changes to occur in students' attitudes, concerns, anxieties, and confidence about teaching during their teacher training years. The major purpose of this study was to determine the nature of these purported changes for a large group of education students at three different stages in their teacher training. The secondary purpose was to determine if changes in attitudes, concerns, or anxiety toward teaching are related to selected student characteristics.

Hypotheses

Three general hypotheses were formulated and tested in this study. Each was related to data collected from three groups of teaching candidates at three stages of teacher training: at the beginning of the teacher-education program, just prior to student teaching, and at the end of the student teaching experience. The three hypotheses are:

1. Teacher-education students' attitude towards teaching, anxiety about teaching, and concern about teaching will not change during teacher preparation.

2. Students' confidence about teaching, as indicated by ratings of assurance about their decision to teach and by ratings of their expected effectiveness as a teacher, will not change during teacher preparation.
3. Student characteristics of gender, teaching field, time of their decision to become a teacher, anticipated teaching level, and level of father's education will not be related to the measurements of attitude, anxiety, and concern about teaching.

Method

The subjects for this study consisted of three groups of students (N = 581) enrolled in the teacher preparation program at Bowling Green State University during the spring semester of 1985. Group one consisted of approximately 260 students (mostly freshmen and sophomores) enrolled in a required orientation to the field of education course; group two was comprised of 151 students who were about to commence their student teaching; and group three was composed of 162 students who had just completed their student teaching. The latter two groups were comprised of college seniors. A fourth subset sample of students, 81 individuals from groups two and three for whom both pre- and post-student teaching measurements were available, was obtained to verify changes over the student teaching experience on an individual student basis and to further analyze change on

individual scale items for each of the selected measurement instruments. It was assumed that the three groups of students were in essence random selections from a single population; in other words, it was assumed that the only real differences between the groups was the length of time in the program and the resultant varied degrees of exposure and experiences in the teacher-education program.

This sample of teacher candidates can be described as predominantly female (75%); interested in elementary education (36%), secondary education (27%), and special education (19%); from small to medium-size high schools; from rural and suburban communities (80%); from families with at least one near relative a teacher (55%); from families with well over one-half of their mothers or fathers not having a four-year college degree; and from somewhat larger families (over 60% have two or more siblings).

All the subjects were administered: (a) the Teacher Concerns Questionnaire, (b) the Attitude Toward Teaching As a Career Scale, (c) the Teaching Anxiety Scale, and (d) a questionnaire requesting various types of demographic information such as selected teaching field, gender, the educational level of their fathers, anticipated grade level of teaching (elementary or secondary), when they decided to become a teacher, assurance of their decision to teach, and their expected effectiveness as a

future teacher. These latter two scales provided the measure of confidence about teaching. The first measure consisted of a single item constructed with a five-point continuum response format (from 1 [very certain] to 5 [very doubtful] about actually teaching); the second measure consisted of a single item constructed with a seven-point continuum response format (from 1 [not effective at all] to 7 [truly exceptional] in fulfilling the functions of a teacher). In addition to these instruments, the group of students who were enrolled in the orientation to the field of education course were administered the Comprehensive Test of Basic Skills and their ACT scores were obtained from college admission records.

One-way ANOVA's were used to determine whether significant mean changes occurred over time in the students' anxiety, concerns, attitudes, and confidence about teaching measurements. When appropriate, Scheffe's post-hoc procedure with alpha at the .10 level was used to ferret out significant pair-wise mean comparisons. Two-way ANOVA's used the measurements of anxiety, concerns, and attitudes as dependent variables; student characteristics (gender, level of teaching, teaching field, time of decision to become a teacher, and father's education) were used as classification variables in these analyses. The second independent variable for each two-way ANOVA was the three times in the student's program when testing took place (i.e., beginning

of the program, just prior to student teaching, and post-student teaching).

Pearson product moment correlations were calculated between the anxiety, concern, attitude, Comprehensive Test of Basic Skills (CTBS) composite scores, and the American College Test (ACT) composite scores for the orientation to education student sample. Additionally, a series of t tests of dependent means were made for the N = 81 pre-post same-group student teaching sample; the criterion measurements for these tests were the anxiety, attitude and concerns scores. The responses of this pre-post student teaching sample on the individual scale items for each measure were also examined. This was done primarily to provide validation of the descriptive indices of student change during the student teaching period that were evident from comparing the larger unmatched pre- and post-student teaching samples.

Results

Data to be presented in this section will reveal that over the three measurement periods of the teacher preparation program that (a) the students' attitude scores toward teaching did not significantly change, (b) they became less anxious about teaching, (c) they generally became less concerned about teaching, (d) they became more assured of actually becoming a teacher, and (e) they did not perceive themselves becoming more

effective as future teachers. In addition, it will be shown that there were several significant relationships between the selected student characteristics (gender, teaching field, level of father's education, etc.) and the various measurements of anxiety, concerns, and attitude toward teaching. Also, it will be shown that the students responded more positively to several of the individual concern and anxiety scale items after their student teaching experience than they did at the beginning.

One-Way ANOVAs: Three Points in Time

Summary data related to testing the first two hypotheses are presented in Table 1. The differences between the attitude toward teaching mean scores obtained from the three samples who were at different stages of their teacher training were not significant ($F = .82$, $p = .44$). The F-ratio related to the anxiety about teaching means from the same three samples was significant ($F = 15.26$, $p = .00$). The Scheffe comparison of these means indicated that both the orientation and beginning student teaching samples had significantly higher means (i.e., more anxiety about teaching) than did the post-student teaching sample. Similarly, differences in the mean scores were found on three of the four concern measures: Total Scale ($F = 3.41$, $p = .03$); Task Scale ($F = 14.08$, $p = .00$); the Self Scale ($F = 5.31$, $p = .01$); but not for the Impact Scale ($F = .44$, $p = .65$). The patterns of change on these subscales were not consistent as

are indicated by the means and the results of the Scheffe comparisons presented in Table 1. Whereas the Impact Scale revealed no significant changes across time in concerns about teaching, the Total, Task and Self Scales indicated significantly higher scores for the pre-student teaching sample when compared to the orientation to education sample of students. Both the Total Scale and the Self Scale suggested some decrease in scores (i.e., becoming less concerned about teaching) during student teaching as the post-student teaching mean score on these scales are lower than the mean scores prior to student teaching and not significantly different from the orientation sample mean scores. However, the opposite appears to be true for the Task Scale as the post-student teaching mean scores are numerically higher than for either the earlier two sets of scores and significantly higher than the mean for the group just beginning their training. Thus it appears that task concerns increase during teacher training, impact concerns remain relatively constant, and self concerns increase just prior to student teaching but fall back to approximately the beginning teacher level during student teaching. This decrease in self concerns during student teaching is likely the result of successful experiences within the student teaching environment.

Insert Table 1 about here

The comparisons of means obtained at the three different points in training indicate significant differences for the students' self ratings of their assurance of actually becoming teachers ($F = 4.54$, $p = .01$) but not for their perceived effectiveness as a future teacher ratings ($F = 1.02$, $p = .36$). An examination of the mean trends for both self ratings (see Lines 4 and 5 in Table 1) suggests an increasing confidence about teaching during the training years as indicated by a significant increase in students' assurance of their decision to teach (from 1.77 to 1.55) and of numerically greater perceived effectiveness mean ratings as future teachers although this latter difference was not significant (the obtained means were 5.17, 5.21, and 5.32 for the first through third testing periods).

Two-Way ANOVAs: Student Characteristics X Points in Time

Several significant differences were revealed when the student characteristics (gender, teaching field, anticipated grade level of teaching, time of decision to become a teacher, and father's level of education) were used as classification variables in two-way ANOVAs of the attitude, concern, and anxiety scores. The 16 (of the possible 30--five student characteristics X six scale scores) comparisons revealing row (characteristics) mean differences at the $p < .05$ level of significance are presented in Table 2. For the anxiety towards teaching scale, there were mean differences relative to students'

classifications of teaching field, when they made their decision to become teachers, and father's education. Data in Table 2 reveal that students in teaching fields of special education, elementary, secondary, and specialized areas (art, music, etc.) report increasingly amounts of anxiety about teaching, (anxiety means of 64.87, 67.67, 68.63, and 70.82, respectively, $p = .02$). Additionally, the data indicate that those students making early decisions to become teachers and students of fathers with more education report less anxiety about teaching than those who made their decisions later and those whose fathers had higher levels of education, respectively.

Insert Table 2 about here

The following student characteristics produced significant mean differences on the attitude towards teaching scale: gender, grade level, teaching field, and when the decision to teach was made. The F and p values resulting from the characteristics classifications of these two-way ANOVA's are also presented in Table 2. Females and those planning to teach in the elementary grades reported more positive attitudes towards teaching than did males and those planning to teach in the secondary grades (F's of 18.31 and 24.47, respectively). Similarly, those students deciding earlier in their lives to become teachers and those in the elementary teaching field relative to those in secondary,

special education, and special area fields reported more positive attitudes toward teaching (F's of 12.92 and 7.47, respectively, see Table 2).

Two-way ANOVA's were also completed on each of the four concerns scale scores with each of the five student characteristics classifications. These comparisons, as presented in Table 2, revealed that there were mean differences on one or more of the concern scales when student scores were classified by gender, desired grade level of teaching, teaching field, time of decision, but not by father's educational levels. For the total concerns scale, there were significant mean differences between elementary and secondary grade level teachers ($F = 5.67$) and between the four teaching fields ($F = 5.10$). It appears from these two classifications that those planning to teach in the secondary grades report lower total concerns than those planning to teach in the elementary grades and that those in the secondary teaching field also report lower total concerns than students in the other teaching fields of specialized areas, special education, and elementary. Relative to the Impact Scale, three significant F's were found: gender ($F = 4.61$), teaching field ($F = 3.63$), and time of decision to teach ($F = 3.91$). Males, secondary teachers, and those deciding to teach after high school appear to be less concerned about their impact on their future students. Similarly, those students who chose a secondary

teaching field and those who desired to teach in the secondary grades reported lower Task Scale and Self Scale concerns than did the other groups (F's of 3.78 and 4.68 for teaching field, respectively; F's of 3.81 and 5.02, respectively, for grade level).

Additional two-way ANOVAs were completed using students' levels of assurance of their decision to teach and their levels of perceived effectiveness as future teachers as classification variables (rows) and the three time periods (beginning program, pre- and post-student teaching) as the column variables. The five assurance classifications (row effects) resulted in these significant mean comparisons: anxiety ($F = 19.89$, $p = .00$); attitude ($F = 64.28$, $p = .00$); and impact (concerns) scores ($F = 2.25$, $p = .04$). The patterns of the means suggest that college students more certain of their decision to teach have higher attitudes about teaching, are less anxious about teaching, but are more concerned about their impact on pupils when compared to those students less sure of their decision to teach. The ANOVAs using levels of perceived effectiveness as a future teacher as the row variable resulted in the following significant row F's: anxiety ($F = 36.69$, $p = .00$); attitude ($F = 16.53$, $p = .00$); total concerns score ($F = 3.93$, $p = .00$), impact (concerns) scores ($F = 6.48$, $p = .00$), task (concerns) scores ($F = 2.57$, $p = .04$), and self (concerns) scores ($F = 3.24$, $p = .01$). A review

of these means suggests that those students perceiving themselves more effective as a future teacher tended to have more positive attitudes about teaching, lower anxiety about teaching, lower task, self, and total scores on concerns about teaching, but higher concerns about their impact upon their future pupils.

Two-Way ANOVAs: Interaction Effects

The series of two-way ANOVA's also resulted in three significant interaction effects which are numerically described in Table 3. The first interaction was related to the group by gender analysis of the attitude scores ($F = 7.97$, $p = .00$). The cell means presented in Table 3 suggest that the attitude towards teaching of the female students remain rather constant over the three time periods whereas the attitudes of male students decrease markedly during the student teaching experience.

Insert Table 3 about here

An analysis of the cell means related to the second interaction, teaching field by group, suggests that the significant F of 3.04 was not primarily caused by the elementary and specialized area majors as a plot of these two sets of means over the three time periods results in rather parallel lines. However, similar plots of the means for the secondary and special education majors indicate significant interaction. It appears that the student teaching experience had a very positive

attitudinal effect on special education majors but a markedly dampening effect on the attitudes of the secondary majors. (It should be noted that most of the males in the study were secondary majors, thus male gender and the secondary factors [grade level and teaching field] may be confounded.)

The third interaction also involves the gender classification but with the anxiety scale. The significant interaction F (3.53, p = .03) and an analysis of the cell means indicate somewhat of a decrease in anxiety for the males between beginning program and pre-student teaching but then a heightened anxiety during student teaching. The females had about the same anxiety level for the first two measurement periods but then showed a significant decrease in anxiety during student teaching (from a mean of 70.07 to 62.60). (This significant drop in anxiety for the females during student teaching is supported by the t ratio [6.37, p = .00] that was computed on the total anxiety scores from the sample of 81 preponderantly female pre-post same group student teachers [M_1 = 69.38, M_2 = 63.55].)

Pre-Post Student Teaching Subsample: t Test Comparisons

The series of t test comparisons on the subsample of 81 individuals with both pre- and post-student teaching scores resulted in findings very similar to those for the total sample. Namely, no real change between pre- and post-student teaching in attitude, task and impact scores but significant mean differences

existed in anxiety, self, and total concerns scores. Anxiety towards teaching decreased as did the total and self concerns scores; these significant decreases all indicate positive changes during student teaching.

In addition to these total scale score comparisons, dependent t-tests were used to ascertain whether there were mean changes on each scale item for each measure. These procedures revealed no significant item response changes on the attitude scale, but they revealed significant response changes ($p < .05$) for six of 14 items (all in the positive direction) on the four concern scales, and on 12 of 29 items (all also in the positive direction) for the anxiety towards teaching scale. Larger changes on the concerns scale (significant at .01 level) were reflected in decreases of concern about: lack of instructional materials, doing well in the presence of a superior, feeling adequate as a teacher, being accepted and respected by other professionals, and getting a favorable evaluation of teaching. Similar items of major change (significant at .01 level) for the anxiety scale were items reflecting reduced anxiety about: parent-teacher conferences, observation by college supervisor, ability to improvise in class, observation by principal, admitting to class "that I don't know" an answer to a student question, ability to recall things before a class, and feeling as competent as other preservice teachers.

Pearson Correlations Among Measures

Table 4 presents Pearson coefficients of correlation between the measures of teaching anxiety, concerns, attitude, Comprehensive Test of Basic Skills (CTBS) composite raw scores, and the American College Test (ACT) composite scores for 211 students in the entry level teacher education course. These coefficients reveal no significant relationship between the ACT and the six scales used in this study. The CTBS appears to be slightly negatively related (-.08 to -.29) to the four concerns scales but not related to either the attitude or anxiety scales. The anxiety and attitude scales are moderately related (-.41) to each other but not related to any of the other measures. And, as would be expected, the subscales of the concerns instrument are moderately to highly related with one another (.46 to .90).

Insert Table 4 about here

Summary and Discussion

The data obtained from these three groups of students who were at three different points in their teacher training program (just beginning course work and then just prior, and just after student teaching) suggest that elements of attitude, anxiety, concern, and confidence do change during teacher training. These changes do not, however, follow a straightforward pattern for each of these measures nor do they occur in the same way for all students.

The changes identified in anxiety about teaching and confidence as a teacher moved in a consistently positive direction during training. The students showed no overall change in attitude toward teaching over the three measurement points in the training program although the male and secondary subsamples reported less positive attitudes toward teaching following the student teaching experience. The change in concerns about teaching showed a general pattern of increase prior to student teaching but a decrease following student teaching. However, the change in concerns as measured on each of the three concern subscale scores did not vary consistently. The Task Subscale showed a general increase during the training program, the Impact Subscale revealed no significant change, and the Self Subscale increased prior to but decreased during student teaching.

The analyses of the relationships between student change and selected student characteristics provided some insight into what may occur during teacher training. Some of these findings reported by student characteristic follow: a) Grade level: Those planning to teach in the secondary grades as compared to those planning to teach in the elementary grades tend to have less positive attitudes toward teaching (Student teaching results in even a further decrease in positiveness about teaching for the secondary majors.) but report less concern about teaching. b) Gender (The gender and teaching level factors were confounded

to a degree as most males were secondary majors although this may be typical of most teacher candidate samples.): Males reported a lower concern of impact (influence on students) and less positive attitudes than females; female students reported a significant drop in anxiety during student teaching while males reported a slight numerical increase. c) Teaching fields: Future elementary teachers tend to report the most positive attitude, secondary teachers tend to report the lowest concern, special education teachers tend to report the lowest anxiety, and specialized area teachers tend to report the highest anxiety and the most concern about teaching. d) Time of decision to teach: Those students deciding very early to be a teacher appear to have a more positive personality profile for they tend to be less anxious about teaching, have more positive attitudes towards teaching, and are more concerned about their impact on their future students. e) Father's educational level: Students whose fathers have less education tend to be more anxious about teaching.

The data obtained from these samples of students appear not to lend consistent support for a developmental theoretical perspective of teacher training. The pattern of decreasing anxiety scores during the three points in training supports Parson's (1973) assumption underlying teaching anxiety; however, a pattern of increasingly positive scores at later points in teacher training as speculated for the Attitude Towards Teaching

As a Career Scale (Merwin & DiVesta, 1959) was not evident. Scores on this scale for the total groups remained relatively constant across the three points in training, but the scores for the male and secondary subsamples were actually lower for the post-student teaching sample. This latter discrepancy may be an artifact of the particular sample of students; it may be unique to the nature of male and secondary teacher candidates; or it might reflect a difference in readiness for the student teaching experience for these two teacher candidate subgroups. Similarly, the scores on the Teacher Concerns Questionnaire did not reveal a consistent developmental pattern of change; however, the scale score patterns did generally follow Fuller's description of preteaching concerns (Fuller & Brown, 1975). Namely, the overall concerns scores tended to be lower at the beginning of training, tended to be higher prior to student teaching, and then tended to be lower at the end of student teaching. Further, the "impact on pupils" concerns (hypothesized to be addressed in later stages of career development) subscale scores did not change but were relatively higher than the Task and Self subscale scores at all three points in the training program.

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Table 1

One Way ANOVA's for Five Criterion Measures

	Groups at Three Times in Training								
	(1) Orientation		(2) Std. Tchng.		(3) Post-Std. Tchng.				
Measures	N	M	N	M	N	M	F	p	Scheffe Results
1. Attitude	211	51.09	151	50.09	162	50.53	.82	.44	
2. Anxiety	211	70.16	148	69.57	160	63.63	15.26	.00*	$\bar{x}_1 > \bar{x}_3$ $\bar{x}_2 > \bar{x}_3$
3. Concerns:									
a. Task	212	11.91	151	13.50	162	13.79	14.08	.00	$\bar{x}_2 > \bar{x}_1$ $\bar{x}_3 > \bar{x}_1$
b. Impact	212	18.69	151	18.76	162	18.33	.44	.65	
c. Self	212	16.42	150	17.76	162	16.22	5.31	.01	$\bar{x}_2 > \bar{x}_1$ $\bar{x}_2 > \bar{x}_3$
d. Total	212	47.01	150	50.02	162	48.33	3.41	.03	$\bar{x}_2 > \bar{x}_1$
4. Effectiveness	208	5.17	151	5.21	162	5.32	1.02	.36	
5. Assurance	212	1.77	151	1.69	162	1.50	4.54	.01	$\bar{x}_3 < \bar{x}_1$

*p's of .00 are to be interpreted as " $< .00$|."

Table 2

Two-Way ANOVAs: Significant Student Classification Comparisons

Gender Classification

	Male		Female		*F-Ratios	
Measures:	N	M	N	M	Gender	p
Attitude	90	47.66	431	51.26	18.31	.00**
Impact	90	17.71	432	18.79	4.61	.03

Grade Level Classification

	Elementary		Secondary		*F-Ratios	
Measures:	N	M	N	M	Grd. Level	p
Attitude	236	52.33	199	49.00	24.47	.00
Concern Tot.	236	49.64	199	47.67	5.67	.02
Task	237	13.33	199	12.83	3.81	.05
Self	236	17.21	199	16.54	5.02	.03

Teaching Field Classification

	Elementary		Secondary		Spec. Educ.		Spec. Areas		*F-Ratios	
Measures:	N	M	N	M	N	M	N	M	Field	p
Anxiety	162	67.67	126	68.63	116	64.87	108	70.82	3.49	.02
Attitude	163	52.84	127	49.08	117	50.01	110	49.84	7.47	.00
Concern Tot.	162	48.69	127	45.13	118	48.82	110	50.49	5.10	.00
Task	163	12.96	127	12.01	118	13.39	110	13.45	3.78	.01
Impact	163	18.66	127	17.50	118	19.12	110	19.15	3.63	.01
Self	162	17.07	127	15.61	118	16.31	110	17.89	4.68	.00

Time of Decision to Teach Classification

	Elementary		High School		After Hi School		*F-Ratios	
Measures:	N	M	N	M	N	M	Time	p
Anxiety	131	64.58	253	68.33	133	70.80	7.50	.00
Attitude	133	53.02	253	50.47	137	48.53	12.92	.00
Impact	133	19.33	253	18.60	137	17.88	3.91	.02

(table continues)

Father's Educational Level

	Jr.Hi.Sch.		High School		Some Coll.		4-Year		4-Year +		*F-Ratio	
Measure:	N	M	N	M	N	M	N	M	N	M	Ed. Level	p
Anxiety	29	71.03	182	69.65	119	66.13	115	68.34	68	64.91	2.81	.02

*Refer to Table 1 for indications of main effect F's related to mean differences among the three column or group classifications (beginning program, pre-student teaching, post-student teaching); the F's presented in Table 2 are related to the row (or gender, grade level, etc.) classifications; the significant interaction F's are presented in Table 3.

**p's of .00 are to be interpreted as "$<$.001."

Table 3

Two-Way ANOVAs: Significant Interaction Effects

Gender X Group: Attitude Toward Teaching

				Cell Means (N)		
Source	F	p	Gender	Beginning	Pre-Std.Tchng.	Post-Std.Tchng.
Gender	18.31	.00	Male	48.83	49.69	42.77
Group/Time	.73	.49		(36)	(32)	(22)
Interaction	7.97	.00	Female	51.55	50.17	51.79
				(175)	(117)	(139)

Teaching Field X Group: Attitude Toward Teaching

				Cell Means (N)		
Source	F	p	Field	Beginning	Pre-Std.Tchng.	Post-Std.Tchng.
Teaching Field	7.47	.00				
Group/Time	.18	.84	Elementary	52.52	52.14	53.91
				(80)	(36)	(47)
Interaction	3.04	.01				
			Secondary	50.37	50.64	45.90
				(49)	(39)	(39)
			Spec. Educ.	50.32	46.65	51.06
				(47)	(20)	(50)
			Spec. Areas	49.37	49.71	50.68
				(30)	(55)	(25)

Gender X Group: Anxiety Towards Teaching

				Cell Means (N)		
Source	F	p	Gender	Beginning	Pre-Std.Tchng.	Post-Std.Tchng.
Gender	2.24	.14	Male	72.40	67.69	69.90
Group/Time	15.06	.00		(35)	(32)	(21)
Interaction	3.53	.03	Female	69.72	70.07	62.60
				(176)	(114)	(138)

Table 4

Correlations Among Eight Measurements for the Orientation Group*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Concern Tot.		.90	.84	.79	.08	-.02	-.03	-.22
2. Self			.65	.60	.12	.05	.05	-.22
3. Impact				.46	-.07	.02	-.02	-.08
4. Task					.16	-.16	-.10	-.29
5. Anxiety						-.41	.08	-.02
6. Attitude							.01	.01
7. ACT Comp.								.23
8. CTBS Comp.								

*These Pearson r correlations were based on an N of 211; r's = |.14| significant at the .05 level with 200 df; r's = |.18| significant at the .01 level.

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